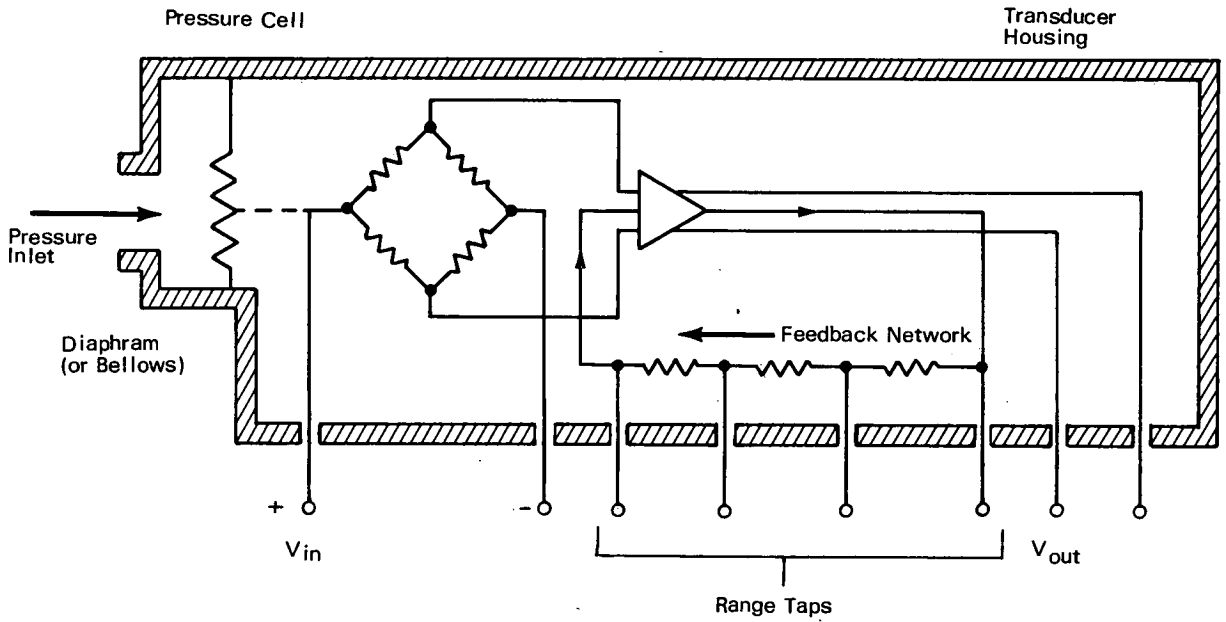
NASA TECH BRIEF

Kennedy Space Center

Pressure Transducer with Four-Decade Dynamic Range

Pressure inputs ranging from 0 to 6.39×10^7 N/m^2 (10,000 psig) can be sensed with the unique transducer shown in the figure. This wide dynamic sensing range is made possible through the use of adjustable resistor taps in the gain-control feedback loop. The appropriate range is selected by merely shorting the pins on the electrical connector. The entire assembly, consisting of a sensing element (e.g., a pressure cell), a solid state dc operational amplifier, a converter, and the feedback loop, weighs less than 0.71 kg (25 oz).



Important electrical specifications of the pressure transducer include: (1) an output sensitivity of 0 to 5 Vdc over a full scale pressure input with a 28 Vdc input supply; (2) an output impedance of less than 500Ω; (3) an output noise signal of less than 10 mV; and (4) a nonlinearity of less than ± 0.5% full scale.

The wide dynamic range, the small size, and the option of several signal outputs make the transducer generally applicable wherever pressures of gases such as oxygen, nitrogen, hydrogen and helium are to be measured.

Note:

Requests for further information may be directed to:

Technology Utilization Officer
Code AD-PAT
Kennedy Space Center, Florida 32899
Reference: B71-10323

(continued overleaf)

Patent status:

Inquiries about obtaining rights for the commercial use of this invention may be made to:

Patent Counsel
Mail Code AD-PAT
John F. Kennedy Space Center
Kennedy Space Center, Fla. 32899

Source: The Boeing Company
under contract to
Kennedy Space Center
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